1. A family consisting of one mother, one father, two daughters and a son is taking a road trip in a sedan. The sedan has two front seats and three back seats. If one of the parents must drive and the two daughters refuse to sit next to each other, how many possible seating arrangements are there?
(A) 28
(B) 32
(C) 48
(D) 60
(E) 120

2. What is the probability that a 3-digit positive integer picked at random will have one or more "7" in its digits?
(A) 271/900
(B) 27/100
(C) 7/25
(D) 1/9
(E) 1/10

3. A sphere is inscribed in a cube with an edge of 10. What is the shortest possible distance from one of the vertices of the cube to the surface of the sphere?
(A 10(sqrt3- 1)
(B) 5
(C) 10(sqrt2 - 1)
(D) 5(sqrt3 - 1)
(E) 5(sqrt2 - 1)

4. A contractor estimated that his 10-man crew could complete the construction in 110 days if there was no rain. (Assume the crew does not work on any rainy day and rain is the only factor that can deter the crew from working). However, on the 61-st day, after 5 days of rain, he hired 6 more people and finished the project early. If the job was done in 100 days, how many days after day 60 had rain?
(A) 4
(B) 5
(C) 6
(D) 7
(E) 8

5. If s and t are positive integer such that s/t=64.12, which of the following could be the remainder when s is divided by t?
(A) 2
(B) 4
(C) 8
(D) 20
(E) 45

6. A committee of 6 is chosen from 8 men and 5 women so as to contain at least 2 men and 3 women. How many different committees could be formed if two of the men refuse to serve together?
(A) 3510
(B) 2620
(C) 1404
(D) 700
(E) 635

7. If x is positive, which of the following could be the correct ordering of $1/x, 2x$ and x^2 ?
I. $x^2<2x<1/x$
II. $x^2<1/x<2x$
III. $2x<x^2<1/x$

(A) None
(B) I only
(C) III only
(D) I and II only
(E) I II and III

8. In the xy plane, Line k has a positive slope and x-intercept 4. If the area of the triangle formed by line k and the two axes is 12, What is the y-intercept of line K ?
(A) 3
(B) 6
(C) -3
(D) -6
(E) -4

9. Of the applicants passes a certain test, 15 applied to both college X and Y. If 20 % of the applicants who applied college X and 25% of the applicants who applied college Y applied both college X and Y, how many applicants applied only college X or college Y?
(A) 135
(B) 120
(C) 115
(D) 105
(E) 90

10. What is the lowest positive integer that is divisible by each of the integers 1 through 7, inclusive?
(A) 420
(B) 840
(C) 1260
(D) 2520
(E) 5040